

**IN THE SPECIFICATION:**

**Please replace the paragraph beginning on page 6, line 23 with the following rewritten paragraph.**

FIG. 5 depicts a block diagram illustrating a configuration in which a plurality of optical emitter-~~detector~~receiver pairs may be connected to a single controller as may be desired, in accordance with a preferred embodiment of the present invention.

**Please replace the paragraph beginning on page 8, line 11 with the following rewritten paragraph.**

Thus, when four photoelectric sensors 32, 34, 36, and 38 are connected in combination with a distributed controller ~~36~~ 56, as illustrated in FIG. 2, redundancies can occur which add cost and complexity and diminish reliability. For example, a total of five printed circuit boards and five power regulation circuits can exist within a single 10 foot conveyor section, all of which have the potential to fail, thus decreasing system reliability. The present invention eliminates duplication of functionality by integrating the sensing circuitry into the controller and substituting the software for hardware where possible.

**Please replace the paragraph beginning on page 9, line 23 with the following rewritten paragraph.**

FIG. 5 depicts a block diagram 100 illustrating a configuration in which a plurality of optical emitter-~~detector~~receiver pairs may be connected to a single controller as may be desired, in accordance with a preferred embodiment of the present invention. Note that in FIGS. 4 and 5, like parts are indicated by identical reference numerals. Thus, optical emitter 81 (i.e., a light emitter) is generally connected to distributed controller 102. Optical emitter 81 transmits light to optical receiver 82. Distributed controller 102 is generally connected to optical receiver 82. Optical receiver 82 receives light transmitted by lens 86 and is generally connected to distributed controller 102. Distributed controller 102 can

also be integrated with or connected to a multiplexer 104. Optical emitter 81 and optical receiver 82 thus can comprise an optical emitter/receiver pair.

**Please replace the paragraph beginning on page 10, line 4 with the following rewritten paragraph.**

The present invention thus offers a number of advantages over conventional (i.e., prior art) methods and systems. The present invention, as disclosed herein, is highly scalable. The number of emitter/receiver pairs connected to a distributed controller may be varied according to the design of the control architecture. For example, a common configuration for conveyor control involves a four-zone controller. In this case, four optical pairs can be connected to a single controller, either with direct connection to the microcontroller I/O pins, or via a multiplexer circuit that permits the microcontroller to access each individual optical sensor under program control. Various combinations of I/O design exist in the art to minimize the cost of detecting or "scanning" the sensor inputs without the need for a custom ASIC in each sensor. ~~The approach of the present invention, however, may also be utilized with a single zone controller, where only one sensor is required by eliminating the multiplexing circuitry and interfacing directly to the microcontroller.~~ In this manner, the design is scalable from 1 through n sensors per controller, which is indicated in FIG. 5.